

left posterior cardinal tooth rather long, curved, the anterior small, sharply pointed, strongly curved upward, corresponding with an excavation below the right cardinal; laminæ ["laterals"] comparatively stout, the anterior of the left valve markedly projecting inward; ligament rather long; long. 7, alt. 6, diam. 4 mill.; soft parts not examined; Justice Latchford writes that the mussel "is of a bright chrome yellow when fresh, and seems to be unlike any other."

Distribution: Blue Lake, Muskegon Co., Michigan, collected and sent by Dr. R. J. Kirkland in 1899—the type lot, No. 1697 of my collection of *Sphæriidæ*; Pine Lake, Marquette Co., Mich., collected by Mr. Bryant Walker in 1902; Gorman Lake, Renfrew Co., Ont., collected by H. Justice F. R. Latchford in 1911. From the two last named places the specimens are considerably smaller, slighter, and little inflated, the nepionic shell is smaller, and in some specimens barely or not marked off (æstivale form).

This is a clearly distinct and well-marked species, apparently ranging nearest *M. rosaceum* Pme. It should be looked for at other places, and especially fossil, in marl deposits, etc.

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#### COLLECTING FROM HADDOCK ON THE GEORGE'S BANKS.

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BY W. F. CLAPP.

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Many malacological students believe that shells taken from fish stomachs have no practical locality. It has been argued that it would be an easy matter for a haddock to change its position 150 miles in 24 hours. It is possible that a fish may retain its food that length of time. Therefore a shell, found in a haddock caught near Cape Cod, may have been in Nova Scotia waters the day before. This of course would apply only to those shells which had passed through a considerable portion of the intestines, for one is sure of the habitat of a shell in proportion to the distance it has traversed the digestive tract. I believe that Gould and other authors who have described shells found in fish, intend the word stomach to include the entire alimentary canal. Less than 5 per cent. of the shells I have found in fish came from the stomach proper.

My object in writing this note is merely to show plausible reason for placing more confidence in fish-stomach localities. Under certain conditions I believe them to be fairly accurate.

On November 20, 1911, I examined the contents of nearly 1000 fish caught in "Cove Clark," Georges Bank, lat. 41.18 N., long. 68.40 W., in 60 fathoms. This locality is known to fishermen as a "spaghetti" spot, on account of the great masses of worm tubes found on the muddy bottom. These worm tubes accumulate in such quantities that it is almost impossible to use a beam trawl successfully. I obtained several hundred specimens of *Yoldia*, *Nucula* and *Leda* from haddock, also quantities of the worm tubes, but no gasteropods. The dredge produced the same results with the addition of *Cyrtodaria siliqua* Daudin and *Panomya norvegica* Spengl. to the Molluscan fauna of this spot. It contained even a greater proportion of the worm tubes. The similarity of the mass of animal life and mud obtained from the fish stomachs to that obtained from the dredge was very noticeable.

On November 21 the position of the vessel was changed to a station about ten miles to the eastward. The depth here was about 40 fathoms, the bottom coarse gravel and there were no worm tubes. The first haddock I examined from this new locality contained about 50 shells, nearly all of which were gasteropods. I examined over 500 haddock during the day and at dark had filled a ten-quart pail with Mollusca.

The dredge was set six times during the day and the contents compared in a surprising degree to the contents of the fish stomachs, not only in Mollusca but in other phyla. Not one specimen of *Yoldia*, *Nucula* or *Leda* could I find in either the dredge or the fish, and yet ten miles to the eastward I had obtained plenty of all three, from the haddock stomachs and from the dredge.

There is nothing definite in these observations. I do not insinuate that all haddock-stomach localities would be as accurate as these appear to be. It is only by recording an observation of this kind that we can ever hope to arrive at definite knowledge on the subject. I merely suggest the possibility that fish-stomach localities are more accurate than most of us have generally supposed.

The following species were removed from haddock November 20 and 21, Lat. 41.18, Long. 68.40 W.

- Puncturella noachina* Linn.  
*Margarita cinerea* Couth.  
*Solariella obscura* Couth.  
*Scala groenlandica* Perry.  
*Amauropsis helicoides* Johnston.  
*Polinices heros* Say.  
     *triseriata* Say.  
     *immaculata* Tott.  
     *nana* Moll.  
*Natica clausa* Brod. & Sowb.  
*Marsenina glabra* Couth.  
*Trichotropis borealis* B. & S.  
*Crepidula plana* Say.  
*Mesalia erosa* Couth.  
*Aporrhais occidentalis* Beck.  
*Couthouyella striatula* Moll.  
*Nassa trivittata* Say.  
*Chrysodomus decemcostatus*  
     Say.  
*Sipho stimpsoni* Morch.  
     *pygmaeus* Gould.  
*Buccinum undatum* Linn.  
*Admete couthouyi* Jay.  
*Bela incisula* Verr.  
     *cancellata* M. & A.  
     *gouldii*, Verr.  
     *pleurotomaria* Couth.  
     *nobilis* Moll.  
     *harpularia* Couth.  
     *decussata* Couth.  
     *bicarinata* Couth.  
     *bicarinata*, var. *violacea*  
         M. & A.  
     *rosea* Sars.  
     *concinnulla* Verr.
- Cylichna alba* Brown.  
*Retusa gouldii* Couth.  
*Philine quadrata* S. Wood.  
     *lima* Brown.  
*Dentalium entalis* Linn.  
*Nucula tenuis* Montg.  
     *proxima* Say.  
*Leda tenuisulcata* Couth.  
*Yoldia limatula* Say.  
     *sapotilla* Gould.  
*Solemya velum* Say.  
     *borealis* Tott.  
*Anomia simplex* d'Orb.  
*Mytilus edulis* Linn.  
*Modiolus modiolus* Linn.  
*Modiolaria corrugata* Stimp.  
*Crenella glandula* Tott.  
     *decussata* Montg.  
*Pecten islandicus* Muller.  
     *magellanicus* Gmel.  
*Venericardia borealis* Conrad.  
     *novanglii* Morse.  
*Astarte castanea* Say.  
     *quadrans* Gould.  
     *subaequilatera* Sowb.  
*Cyelas islandica* Linn.  
*Thyasira gouldii* Philippi.  
*Macoma calcarea* Gmelin.  
*Spisula solidissima* D'llwyn.  
*Cardium pinnulatum* Conrad.  
     *ciliatum* Fabr.  
*Siliqua costata* Say.  
*Saxicava arctica* Linn.  
*Cyrtodaria siliqua* Daud.  
*Thracia truncata* M. & A.

For a more definite knowledge of the fauna of the "Georges" one should consult the excellent paper by S. I. Smith and O. Harger, "Report on the dredgings in the region of St. George's Banks" (Trans. Conn. Acad., III, pp. 1-57, 1876).